



Proceedings of the IAHA-Preconference and Workshop

12. and 15. October 2014
IFOAM 18th Organic World Congress in Istanbul

Organic Animal Husbandry across the world: Towards an Action Plan for development and strengthening of Organic Animal Husbandry



**Otto Schmid, Mahesh Chander,
Angela Escosteguy and Barbara Frueh (Eds.)**

October 2014

IAHA – IFOAM Animal Husbandry Alliance
Sector group of the International Federation
of Organic Agriculture Movements

FiBL Schweiz / Suisse
Ackerstrasse 113, Postf. 219
5070 Frick, Schweiz
Tel. +41 (0)62 865 72 72
info.suisse@fibl.org, www.fibl.org

- All of the statements and results contained in this book have been compiled by the authors and are to the best of their knowledge correct and have also been checked by the IFOAM Animal Husbandry Alliance (IAHA) and the Research Institute of Organic Agriculture (FiBL). However, the possibility of mistakes cannot be ruled out entirely. Therefore, the editors, authors and publishers are not subject to any obligation and make no guarantees whatsoever regarding any of the statements or results in this work; neither do they accept responsibility or liability for any possible mistakes, nor for any consequences of actions taken by readers based on statements or advice contained therein.
- Authors are responsible for the content of their own articles. Their opinions do not necessarily express the views of IAHA or FiBL.
- A final version with the conclusions and if necessary corrections will be published at the website of the IAHA <http://www.ifoam.org/en/sector-groups/iaha-animal-husbandry-alliance>.
- Any enquiries regarding this book and its contents should be sent to Otto Schmid, FiBL, Ackerstrasse 113, CH-5070 Frick, e-mail otto.schmid@fibl.org.
- Please quote articles from this book individually with name(s) of author(s) and title of article. The same applies to the tables: Please quote source, title of table and then the overall report. The whole report should be cited as:

Schmid O., Chander M., Escosteguy A. and Frueh B. (Eds.) (2013): Organic Animal Husbandry across the world: Towards an Action Plan for development and strengthening of Organic Animal Husbandry. Proceedings of the IAHA Pre-Conference / workshop on 12./15. October 2014 at 18th Organic World Congress in Istanbul. International Federation of Organic Agriculture Movements - Animal Husbandry Alliance (IFOAM-IAHA), Bonn and Research Institute of Organic Agriculture (FiBL), Frick

© October 2014 Animal Husbandry Alliance of International Federation of Organic Agriculture Movements (IFOAM, Charles-de-Gaulle-Str. 5, 53113 Bonn, Germany, Tel. +49 228 926 50-10, Fax +49 228 926 50-99, e-mail headoffice@ifoam.org, Internet www.ifoam.org, Trial Court Bonn, Association Register no. 8726) and Research Institute of Organic Agriculture (FiBL), Ackerstrasse 113, 5070 Frick, Switzerland, Tel. +41 62 865 72 72; Fax +41 62 865 72 73, e-mail: info.suisse@fibl.org, Internet: www.fibl.org

Content and language editors: Otto Schmid and Helga Willer, FiBL, Frick, Switzerland
 Layout: Bettina Billmann, Germany and Helga Willer, FiBL, Frick, Switzerland
 Cover pictures: Cattle left: Roger Becker (Brazil);
 Poultry middle: Angela Escosteguy (Brazil),
 Pigs right: FiBL Archive (Switzerland).

Printed at FiBL Frick, Switzerland

Price: free, can be downloaded from the IAHA Website:

<http://www.ifoam.org/en/sector-groups/iaha-animal-husbandry-alliance>



Table of contents

IAHA Preconference 12 October 2014	4
Introduction	5
Organic Livestock Husbandry Towards More Sustainability	6
Organic Livestock worldwide – Some key statistics	9
Organic Animal Husbandry in Asia: An overview	12
Organic Animal Husbandry in South America and Caribbean	17
Organic Animal Husbandry in North America	21
Organic Animal husbandry in Europe – current and future challenges	25
Organic Animal Husbandry in Turkey and Middle East	28
IAHA Workshop - Main Conference 15 October 2014	32
Organic Public Policies: Case of success in Brazil	34
Breeding in Organic Animal Husbandry - where to go?	37

IAHA Workshop - OWC Pre-conference

Organic Animal Husbandry across the world: Situation, Development, Needs and Demands

Date and time: Sunday, October 12th 2014, 13:30-17:30 h

Venue: Yeditepe University, Faculty of Fine Arts, Room 6E06, 6th floor

Objective

The goal of the workshop is to provide a diagnosis of the Organic Animal Husbandry situation across the world, and together with the participants, discuss and identify development needs and demands concerning research, education, extension, outreach, market and public policies.

Program

13:30- 13:45 **Welcome, IAHA Introduction** *Otto Schmid, Chair of IAHA (FiBL, Switzerland)*

13:45- 14:10 **Organic Livestock Husbandry - Towards More Sustainability**
Nadia Scialabba, FAO - Food and Agriculture Organization of United Nations (Italy)

14:10-14:20 **Organic Animal Husbandry in Asia – an overview** *Dr. Mahesh Chander (India)*

14:20- 14:30 **Organic Animal Husbandry in South America and Caribbean**
Angela Escosteguy (Brazil)

14:30 – 14:50 **Coffee Break**

14:50- 15:00 **Organic Animal Husbandry in North America** *François Labelle (Canada)*

15:00 - 15:10 **Organic Animal Husbandry in Europe** *Chris Atkinson (UK)*

15:10 - 15:20 **Organic Animal Husbandry in Turkey and Middle East**
Prof. Dr. Ibrahim AK and Dr. Metin Guldas (Turkey)

15:20 – 15:30 **Organic Animal Husbandry in other parts of the world** *Plenary contributions*

15:30 – 16:30 **Open workshop to discuss with participants** *Otto Schmid, (Switzerland)*
(in small thematic groups)

16.30 - 17:00 **Summary of group work in plenary**

17:00 - 17:30 **Conclusions on development needs and general discussion**
Prof. Dr. Gerold Rahmann (Germany) and IAHA Steering board member



Introduction

OTTO SCHMID¹

It is a pleasure for me to hold this first pre-conference, organized by the IFOAM Animal Husbandry Alliance (IAHA). IAHA is an informal network of individuals and organizations interested in supporting and strengthening the development of organic animal husbandry. It is the animal husbandry 'think tank' of the IFOAM Action Group. IAHA allows IFOAM affiliates to share organic animal husbandry knowledge, concerns, positions and issues and integrate them into the work of IFOAM and the organic movement.

The IFOAM General Assembly in Korea in October 2011 recommended that animal husbandry be given more emphasis in IFOAM through a worldwide platform. A group of interested individuals, supported by the IFOAM World Board, began to organize and, in November 2012, the IFOAM Animal Husbandry Alliance (IAHA) became approved by the IFOAM World Board. The inaugural meeting of what became the IAHA occurred during the IFOAM Husbandry Conference, September 2012, in Hamburg. At this conference, a questionnaire was distributed to participants to gather animal husbandry concerns in different parts of the world. The results were then summarized and published at the special IAHA website, which was established with support of the IFOAM head office.

Until today IAHA has sent out four thematic newsletters: The first one about Europe, the second one about Latin America, the third one about Asia and the fourth one about North America - each of them giving an excellent overview about organic animal husbandry in the respective area.

IAHA has established working forums on specific issue areas. Since June 2014 a discussion group on animal breeding for organic farming has started a lively dialogue. We will give a summary of the breeding forum discussion in the IAHA Workshop at the main conference. Other discussion forums are in discussion for example: animal welfare or the use of medicinal plants in animal health care.

A major work was the planning of this Pre-conference and the workshop at the main conference. I want to thank the members of the IAHA Steering group for their great support: Angela Escosteguy (Brazil), Mahesh Chander (India), Chris Atkinson (UK) and François Labelle (Canada) as well as to Barbara Früh from FiBL (Switzerland) assisting me in the preparation of the two sessions.

Big thanks to Bettina Billmann from Germany and Helga Willer from FiBL Switzerland for helping editing the proceedings. We acknowledge the great support we had from the organizers of the Organic World Congress from Bugday association in Turkey, in particular from Duygu Kayadelen, as well as from the IFOAM head office (Simon Kufferath, Bernadette Hernandez, Thomas Cierpka and Markus Arbenz) and FiBL in Switzerland (Director: Prof. Dr. Urs Niggli) for the financial support.

The goal of this pre-conference is now to provide a diagnosis of the Organic Animal Husbandry situation across the world and, together with the participants, discuss and identify development needs and demands. At the main conference workshop we will work on with the outcome of these discussions and will collect concrete ideas/actions for an IFOAM Action Plan for organic animal husbandry for the next three years, which hopefully IAHA will be mandated by the General Assembly of IFOAM.

Otto Schmid

Chair of IAHA Steering Group

¹ *Research Institute of Organic Agriculture (FiBL), Frick, Switzerland*



Organic Livestock Husbandry Towards More Sustainability

NADIA EL-HAGE SCIALABBA¹, CHRISTIAN SCHADER² AND ADRIAN MULLER²

Key words: organic livestock production, animal feed, sustainability

Abstract

Major environmental concerns are associated with livestock systems including climate change, water depletion and pollution, land degradation and soil erosion, deforestation, threats to biodiversity and impacts of materials and energy use. The aim of this presentation is to advance the sustainability of consumption and production of livestock products through organic agriculture. It is argued that organic standards require strengthening of livestock feeding strategies in order to both provide food for the 2050 population while conserving environmental resources.

Introduction

Livestock contributes up to 40 percent of agricultural gross domestic product across a significant portion of South Asia and sub-Saharan Africa and one billion poor people, mostly pastoralists depend on livestock for food and livelihoods. Globally, livestock provides 34 percent of protein intake and 15 percent of dietary energy. With rising incomes in the developing world, demand for animal products will continue to surge; 68 percent for meat, 58 percent for dairy products and 53 percent for eggs. However, meeting this increasing demand is a major challenge in our context of planet boundaries.

This article introduces the challenges brought by: livestock systems to natural resources; efficiency and consistency of animal feeding strategies; and human consumption of livestock products. It argues that “organic plus” strategies for animal husbandry can potentially meet both environmental conservation and human development objectives.

Results of the analysis

Business-as-usual

The livestock sector is one of the key drivers of land-use change. Each year, 13 billion hectares of forest area are lost due to land conversion for agricultural uses as pastures or cropland, for both food and livestock feed crop production. This has detrimental effects on regional water availability, soil fertility, biodiversity and climate change; livestock contribute to seven percent of the total greenhouse gas emissions through enteric fermentation and manure. Furthermore, 20 percent of the world grasslands are degraded; this trend is increasing, mainly due to intensified animal density per area.

Ever-increasing intensification of livestock production based on concentrate feed adversely affects animal health. In industrial livestock production systems, mortality increases, longevity decreases and disease outbreaks and pandemics are more frequent. Animal welfare and health are key to steadily improving livestock production as diseases can decrease livestock production efficiency by up to a third. As livestock density increases and is in closer confines with wildlife and humans, there is a growing risk of disease that threatens every single one of us: two thirds of the emerging diseases in humans have animal origins and one or two new diseases emerge every year. Hormones and antibiotics used in industrial meat production and excess meat consumption also affects human health. Improving livestock husbandry increases animal efficiencies and protect human health and livelihoods.

Globally, there is enough cropland to feed 9 billion in 2050 if the 40 percent of all crops produced today for feeding animals were used directly for human consumption, while available grasslands were more efficiently used as the basis for livestock feed. Grassland-based and mixed crop-livestock systems optimize nutrient and energy cycles, while encouraging the use of rare livestock breeds that are adapted to low input and harsh environments. This is crucial in a context of climate change and increasing variability.

¹ Food and Agriculture Organization of the United Nations, Rome, Italy. E-mail: nadia.scialabba@fao.org

² Research Institute of Organic Agriculture (FiBL), Frick, Switzerland.



Organic livestock management

The Sustainability and Organic Livestock Model (SOL-m) is a global land use and food systems model capable of analysing the impacts of different production scenarios on land use, food availability, material flow and other environmental impacts. We modelled the potential impacts of a global conversion of animal husbandry to organic agriculture on food availability and the main global environmental challenges in 2050.

SOL-m calculations revealed that sufficient calories and protein could be produced in 2050 through a global conversion to organic livestock management. Furthermore, many positive environmental impacts could be achieved, including lower GHG emissions and energy use, lower N and P surpluses and toxicity potentials. However, organic livestock production as practiced today (i.e. utilizing organically produced concentrate feed) will need more land (hence deforestation) in order to satisfy global food demand.

According to SOL-m preliminary calculations, about 450 million additional hectares of arable land would be needed globally for an organically produced food supply. If global conversion to organic agriculture is combined with a reduction of concentrate feedstuff by 50%, about 250 million additional hectares would be needed. The organic option, however, becomes a win-win if it refrained from using concentrate feeds, as in this case no additional cropland would be needed.

Although to different extent, what is certain is that none of the development scenarios (e.g. business-as-usual or organic) could ever be sustainable without a global shift to sustainable diets, that is, a decreased consumption of livestock products. Therefore, if consumption shares of livestock products would decrease by three or four as compared to the expected trend, organic livestock production without concentrate feed becomes a feasible proposition. In such a scenario, all environmental indicators become positive, including deforestation pressure, and food availability (in terms of global calories and proteins) becomes more than sufficient for the 2050 population, as land freed from concentrate feed production would be used for plant-based food.

Discussion

SOL-m results suggest that a continued trend of current livestock husbandry practices will most likely lead to problematic trends for most environmental indicators, undermining the very base of food production. On the other hand, a conversion to organic livestock management, while resolving many environmental challenges, remains problematic as more land would be needed. The analysis reveals that animal feeding strategies are key to sustainability. Great synergies can be achieved between food availability and environmental health by improving organic standards regarding the use of human-edible feed.

About 60% of the agricultural land worldwide is covered by grasslands. Within the agricultural sector, grasslands play a major role in maintaining food production and fulfilling crucial ecological functions such as soil carbon sequestration, maintaining soil fertility, biodiversity and other ecosystem services. Improving grassland management constitutes a powerful lever for boosting food production without jeopardizing natural resources. An increasing number of consumers acknowledge these functions and are willing to pay higher prices for foodstuffs produced in grass-based systems. This development may enhance the economic viability of grassland-based milk and meat production systems, as compared to concentrate feeding. Global environmental impacts can be mitigated if ruminant production was grassland-based and mono-gastrics were fed with agricultural residues and food waste.

Achieving sustainable food security in 2050 is only possible if the projected global demand for animal products in 2050 was reduced as our planet resources cannot sustain the expected demand, whether livestock is raised conventionally or organically. To be fully sustainable, the organic livestock sector will need to reduce the use of concentrate feed.

Deepening research on feed sources

Feed is a key element in livestock production, often representing up to 70 percent of total production cost. Feed is commonly the main driver of livestock production systems and can determine the financial viability of the livestock enterprise. Feed production and use do impact animal health and welfare,

reproductive efficiency, land use and land use change, water use, greenhouse gas emissions and product quality and safety.

Food conversion efficiency. Human-edible protein output/input ratio varies among livestock systems. For example, a recent FAO study in Asia revealed that intensive poultry production and pigs are the least efficient food converters (respectively, 0.8 and 2.1) while cattle/buffalo and sheep/goat systems fare best (respectively, 15.1 and 24.4); this is because the first group is fed on human-edible grains while the latter group feeds primarily on grass.

Local feed supply. Feed availability - whether crop residues, grain and oilseed by-products, or pasture lands - varies among countries. Given the importance of feed for animal production, accurate assessments of livestock feed supply from all sources and for different livestock types are needed, including different feed ingredients within countries at different times of the year. Livestock numbers and species, as well as breed mix, should be adjusted in relationship to local feed supply.

Alternative feed sources. With rising animal-derived food demand, there is need to explore alternative sources of feed, especially for monogastrics: innovative technologies are needed for agro-industrial by-products, as well as recycling of food waste, in animal diets.

Rational biomass use. National feed assessments need to be improved by better data collection systems. These assessments are the basis for: estimating nutrient balances, identifying potential surpluses or deficits; making better use of available feeds; making spatial and temporal assessments of current and forecasted feed resources; generating an optimum livestock-feed relationship; and balancing trade-offs in biomass use. Equally important is the proper management of the data generated on feed systems, chemical composition and nutritional value of feed ingredients, export and import of feed ingredients and price variations.

Grasslands knowledge. While grassland-based livestock systems could globally meet global calorie and protein requirements, a shift away from concentrate feeding requires better knowledge of: the nutritional value of different types of grasslands as livestock feed, in different regions and for different ruminant species; the suitability of species and varieties of livestock to different grassland types; and the carrying capacity of grasslands in terms of output and sustainable stocking densities.

Determining feed demand involve numerous variables, such as energy demand, protein demand, herd composition and number of animals, among others. For a more sustainable livestock sector, feed sources must also be considered in relation to predominant natural and agricultural resources assets, and choices should be made so as to minimize human-edible foods in animal nutrition. Ultimately, any recommendation (or choice) on animal feeding will necessarily be location-specific.

Suggestions to contribute towards an Action Plan for the development and strengthening of Organic Animal Husbandry

Organic animal production has so far focused on input substitution at all stages of the supply chain in order to safeguard people and the environment, as well as on animal welfare and health. Although organic standards cover animal dietary requirements adequately, including also prohibition on unhealthy feeding practices (e.g. feeding slaughter products or excrements), no provision exists on rational use of resources and imported concentrate feeds are common in organic systems. It is therefore proposed that the Action Plan considers animal feed sources, with specification for grass-fed ruminants and residues-based monogastrics. Protein conversion efficiency, rational use of local biomass and of global landscapes (e.g. pastures), and ethical utilization of food will need to guide decisions on feed sources.

References

<http://www.fao.org/nr/sustainability/sustainability-and-livestock>

Alexandratos N. and Bruinsma J. 2012. World Agriculture Towards 2030/2050. The 2012 Revision. ESA Working Paper No. 12-03, FAO, Rome.

Ahuja V., Otte J. and Makkar H. 2014. Dairy Asia: Towards Sustainability. Proceedings of an International Consultation held in Bangkok, Thailand, 21-23 May 2014. Regional Office for Asia and the Pacific. Food and Agriculture Organization of the United Nations (<http://www.fao.org/3/a-i3985e.pdf>)



Organic Livestock worldwide – Some key statistics

HELGA WILLER¹, JULIA LERNOUD¹ AND BERNHARD SCHLATTER¹

Key words: Organic animal husbandry, statistics

Abstract

This paper presents some of the data collected by the Research Institute of Organic Agriculture in the Framework of its survey on organic agriculture worldwide.

Background

While data on the organic area are available for 160 countries of the world, data on organic livestock are still scarce. With the exception of most European countries, only few countries outside Europe collect such data – which is also due to the fact that organic livestock does not play a major role in organic farming in many countries. In addition to obvious data gaps (e.g. no livestock data are available from Australia – the country with the largest organic area world wide - most of this area being extensive grazing areas), there are major problems with definitions, especially for non-ruminants. Pigs and poultry are reported in numbers of animals, but usually it is not stated in the source if the figure refers to the number of animals slaughtered or the number of places. For pigs for instance, the slaughtered animals may be double than that of the number of places, thus a country-to-country comparison is often not possible, and all data have to be treated with care.

It should be noted that not necessarily all organic livestock data is captured by the FiBL survey and that also from this data gaps may results. Overall, general data availability is getting better, so some of the growth documented in this paper may partly be attributed to better data availability. For the aforementioned reasons the data shown below can only be seen as a very rough approximation to the real situation.

Bovine animals

In total, 4.6 million organic bovine animals were counted in 2012, constituting 0.3 percent of the world's bovine animals. Their number has increased by 70 percent since 2007. Seventy percent of all bovine animals are in Europe. The countries with the largest numbers of bovine animals were China (677'000), followed by the United States (470'000) and France (440'000).

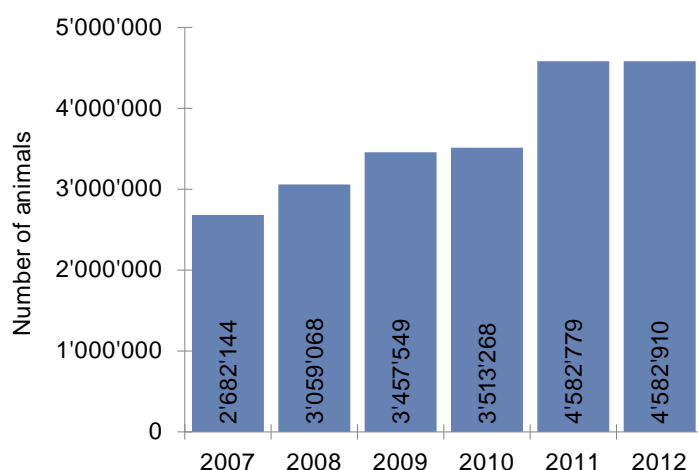


Figure 1: Development of the number of organic bovine animals worldwide 2007-2012

Source: FiBL survey on organic agriculture worldwide based on national data sources 2014

¹ Research Institute of Organic Agriculture (FiBL), Frick, Switzerland

Sheep

In total, 5.6 million organic sheep were counted in 2012, constituting 0.5 percent of the world's sheep. Their number has increased by almost 34 percent since 2007. Eighty percent of all sheep are in Europe. The countries with the largest numbers of sheep were Argentina (1.15 million), followed by the United Kingdom (0.89 million) and Italy (0.7 million).

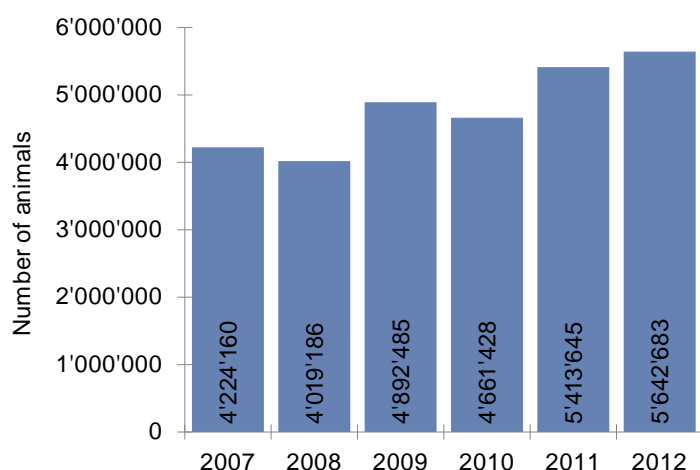


Figure 2: Development of the number of organic sheep worldwide 2007-2012

Source: FiBL survey on organic agriculture worldwide based on national data sources 2014

Pigs

In total, slightly more than one million organic pigs were counted in 2012, constituting 0.1 percent of the world's pigs. Their number has increased by 65 percent since 2007. Seventy-seven percent of all pigs are in Europe. The countries with the largest numbers of pigs were China (215'000), followed by the France (184'000) and Germany (144'000).

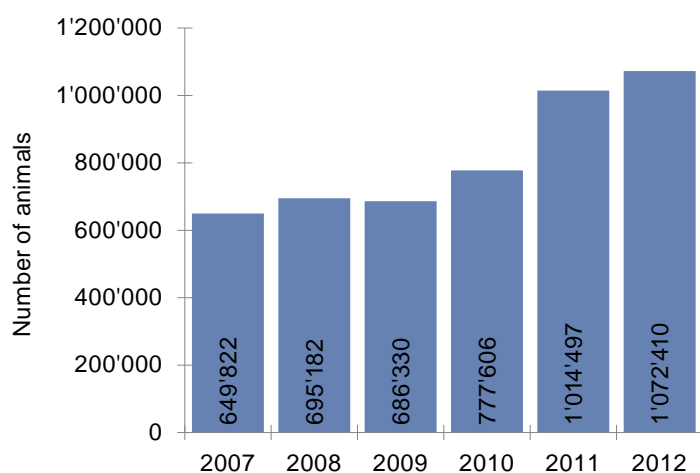


Figure 3: Development of the number of organic pigs worldwide 2007-2012

Source: FiBL survey on organic agriculture worldwide based on national data sources 2014

Poultry

In total, slightly more almost 73 million organic poultry were counted in 2012, constituting 0.3 percent of the world's poultry. Their number has increased by almost 130 percent since 2007. The growth is thus higher than for the other animal groups, probably due to the high demand for organic eggs in many countries. Fifty-three percent of the poultry is in North America and 44 percent in Europe. The countries with the largest numbers of poultry were the United States (37 million), France (11.6 million) and Germany (5.3 million).

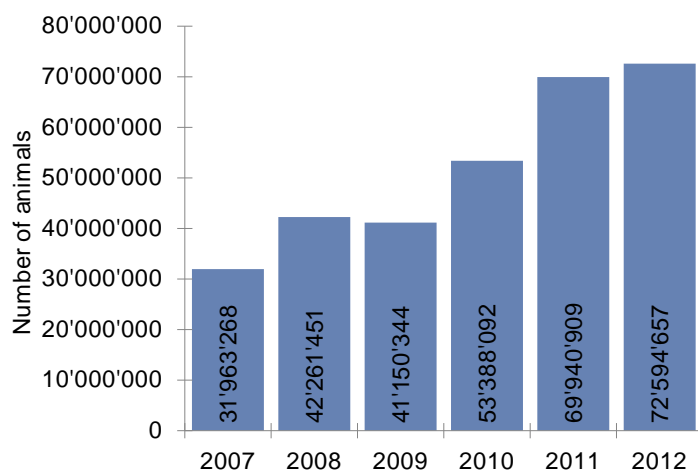


Figure 4: Development of the number of organic poultry worldwide 2007-2012

Source: FiBL survey on organic agriculture worldwide based on national data sources 2014

Conclusions

On a global level, organic livestock numbers have increased considerably between 2007 and 2012. According to available data, organic livestock is concentrated in Europe and North America: 70 % of bovine animals, 80 % of sheep and 77 % of pigs are based in Europe. Organic poultry production is strong in North America with 53 % of all poultry being located there (Europe: 44 %). In many countries, however, particularly in the countries of the South, organic livestock production does not play a major role yet.

It may be expected that organic livestock numbers will continue to increase in the future. In many European countries, livestock products such as milk and eggs are already achieving market shares of 10 to 20 percent of the total market. Latest data on organic retail sales show that the market continues to grow. However, data on organic livestock is still scarce, and there are major data gaps. There is a clear need for more and better data and for permanent and reliable data collection efforts in this field.

Reference

Willer, Helga and Julia Lernoud (2014): The World of Organic Agriculture. Statistics and Emerging Trends 2014. Research Institute of Organic Agriculture (FiBL) and International Federation of Organic Agriculture Movements (IFOAM), Frick and Bonn

Organic Animal Husbandry in Asia: An overview

MAHESH CHANDER¹

Key words: animal husbandry, challenges, Asian countries, organic, opportunities

Abstract

In Asia, organic animal husbandry is not yet developed as much as organic cereals, cotton, tea, herbs and spices, which are not only produced in increasing quantities but also exported significantly. Besides limited export opportunities for organic livestock products (save honey & aquaculture), problems of small farms, hygiene and existence of infectious diseases in these countries are obstacles which need to be addressed to develop organic animal husbandry in these countries. This is possible through enhanced research and development efforts including evaluation and development of organic livestock standards and raise consumer awareness for safe and animal welfare oriented animal products from healthy animals.

Introduction

Organic agriculture is rapidly growing around the world (37.2 Million ha in 162 countries) with 1.8 million producers including significant number of organic farmers in Asian continent especially in India, China, Thailand, Malaysia, etc. The global market for organic products has reached up to US\$ 62.8 billions. And 86 countries across the world now have an organic legislation (Willer et al 2013). It is also well recognized now that the organic animal husbandry has not grown as fast as cereal crops, fruits, nuts, spices, tea, coffee and cotton. While organic farming is rapidly gaining ground in developing countries, the research and development (R&D) activities in organic animal husbandry is confined to EU and a few other developed countries like USA, Canada and Australia.

There are opportunities as well as challenges in organic livestock production in Asian countries which need to be addressed. The organic livestock development opportunities in Asia can be enhanced with more scientific research in organic livestock production under local conditions and strengthening institutional support (Chander et al. 2011, Nalubwama et al. 2011, Rahmann and Godinho 2012, Chander et al. 2012). The efforts are underway including this pre-conference to analyze how animal husbandry can be promoted around the world especially where good opportunities exist owing to natural advantages as in Asian developing countries like India. The efforts being made by IFOAM-IAHA (Animal Husbandry Alliance) are expected to give much needed boost to organic livestock production in Asian countries in coming years (<http://www.ifoam.org/fr/sector-groups/iaha-animal-husbandry-alliance>). The IAHA has appreciably published the 3rd edition (April-June, 2014) of its quarterly Newsletter fully devoted to Asian countries. The situation concerning organic animal husbandry in Asian countries has been presented in this Newsletter.

Results of the analysis

Many constraints and opportunities as regards to organic livestock production, in developing countries in general and India in particular, have been discussed by the authors (Chander et al 2007, Chander et al 2012). Yet, the following observations need further attention:

- Organic animal husbandry is a land based activity, but livestock are kept by many landless livestock keepers in Asian developing countries like India. So a good number of livestock farmers are not eligible for organic livestock farming. Is there a way to include such livestock keepers?
- Even when farmers own land, the number of animals to be maintained per hectare are far too less to be sustainable. Considering majority land holders in Asian developing countries, which own <1 ha and per farmer, land ownership is going down due to division of land in the expanding families. The sustainability of organic livestock production at the given stocking rate is difficult to achieve, at least in countries like India, Pakistan, Bangladesh, Nepal, etc.

¹ Indian Veterinary Research Institute, India, www.ivri.nic.in, <drmahesh.chander@gmail.com>

- Many Asian countries are not yet free from infectious diseases like Foot & Mouth Disease (FMD), which restricts trade from these countries. The reduced opportunity for export discourages live-stock producers to go organic. Strong efforts need to be made by these countries to prevent & control animal diseases.
- Small farmers find it difficult to comply with traceability requirements. Farmer friendly cheaper traceability tools need to be developed.
- Sanitary conditions at production sites and processing units need improvement. May be price incentives for high quality animal products, coming from hygienic production sites, would help to raise awareness of both producers & consumers.
- There was little local demand for organic livestock products *per se*, though the quality consciousness was on the rise among the consumers. The domestic market for organic livestock products needs to be developed through consumer education & awareness programmes for safe and healthy products of animal origin.
- Grazing land is shrinking due to reducing community land and also change in land use pattern.
- Natural sources of essential amino acids (methionine, for instance) are not available good enough to meet the requirements of livestock particularly swine & poultry.
- Green fodder supply is insufficient to meet the requirements of the livestock. Animal survive on poor quality roughages in most of the countries in the region.
- Housing conditions are often improper leading to increasing risk of zoonotic diseases.
- Research and development investment in the area of organic animal husbandry is nearly nil.
- The per animal health cost was negligible in traditional livestock keeping which was prominent; though the trend was towards intensification where this cost is likely to go up.
- Only a few countries like Japan, South Korea, China, Thailand, Malaysia & India have small domestic markets for organic livestock products. The consumer awareness for safe and healthy animal products is rising in many Asian countries.
- The capacity building initiatives in organic animal husbandry are needed in large scale to develop a critical mass of trained people who can assist farmers in organic animal production.

Alongside problems, organic animal husbandry offers good and many opportunities for the producers in Asian countries:

1. It is expensive for intensive livestock producers to convert to organic production, but converting extensive, pasture-based systems could become economically more attractive, if price premiums could be captured for organic meat and livestock products (Scialabba & Hattam 2002). Asian countries may follow experiences of developing countries like Argentina, Brazil and Namibia which could export organic livestock products. India and Nepal export certified organic honey, which may be extended initially to small ruminants, for organic textile/garments including the materials like hides, leather and wool. The Indigenous Technical Knowledge (ITK) of farmers may provide effective options for veterinary care through proper validation, as also the negligible use of agro-chemicals especially in dry lands and hilly regions, makes favourable environment for organic live-stock production. Grass based extensive production systems prevalent in many Asian countries have good potential for conversion into organic animal husbandry. Moreover, indigenous livestock breeds, being less susceptible to diseases and stress, need less allopathic medicines/antibiotics. With rising literacy and the consumers' awareness and concern about animal welfare issues and health foods, domestic consumption of organic foods including of animal origin is likely to get a boost.
2. The organic agricultural products including of livestock origin are gaining increasing popularity. The farmers can cash upon this growing interest in eco-friendly, animal welfare oriented, safe, nutritious and tastier meat products (as perceived by consumers of organic products). The eggs and meat obtained from such venture can be promoted as specialty item to restaurants; hotels and ethnic food jaunts fetching higher returns, better when local birds are raised, which can better perform in free range system. Poultry can utilize the grazing lands/plantation areas (rubber, coffee,

coconut, etc.) by feeding on earth worms, small insects, green grass etc, while fertilizing the land with manure. The free range poultry systems or pastured poultry is a sustainable agriculture technique that calls for the raising of laying chickens, meat chickens (broilers), and/or turkeys on pasture, as opposed to indoor confinement. Humane treatment, the perceived health benefits of pastured poultry, in addition to superior texture and flavour, are causing an increase in demand for such products, which are believed to be having medicinal value, rich in antioxidants and least in chemical, medicinal or hormonal residues. Therefore, the growing interest in organic farming and meat & eggs drawn from free range systems might offer an attractive option in the form of market premiums for livestock farmers to venture into organic production.

3. The growing consumer interest in good quality food products in Asian countries signals the need for developing domestic market for local consumption of organic foods. With rising literacy, income and awareness on food quality generated by the mass media like print, radio & TV, people are increasingly becoming quality conscious. Also, they are increasingly showing their willingness to pay for good quality products. For example, in India, consumers readily pay extra money for unadulterated milk, which is not necessarily organic milk *per se*. This trend indicates that there is good potential for organic livestock products for local consumption. The enterprising farmers are now experimenting on new ideas on production and marketing, wherein organic livestock products like milk, meat, poultry & fish ideally fit. Just like marketing of Fast Moving Consumer Goods (FMCG) and other industrial products market segmentation can be done by the farmers by supplying products to different categories of consumers with varying prices. The growing interest in eating out especially by visiting ethnic food jaunts, looking out for something unique, local and something which is natural and healthy while being environmentally safe offers hope for the production and supply of organic livestock products for domestic consumers. The domestic market development is the key for the development of organic animal husbandry and poultry farming in Asia. The growing market for organic cereals, vegetables, fruits, spices, pulses in Asian metros can be successfully extended to organic livestock and poultry products too. The data on organic livestock population in Asian countries are now available which indicate the emerging scenario in these countries (Table 1).

Table1: Organic Livestock Population in few selected countries of Asia (2012)

Country	Animal type	Population (2012)
Azerbaijan	Bovine animals	3,508
	Poultry	19,173
	Sheep	6,508
China	Pigs	2,15,700
	Bovine animals	6,77,100
	Poultry	11,60,000
Georgia	Pigs	30
	Bovine animals	20
Lebanon	Poultry	2,250
	Sheep	863
	Bovine animals	20
Saudi Arabia	Bovine animals	190
	Sheep	2,846
Cambodia	Sheep	4932

Source: FiBL-IFOAM Survey 2013

Discussion

Despite of the favourable situation existing like traditional animal husbandry, Indigenous Technical Knowledge, limited or no antibiotic use, limited chemical fertilizers application, less dependence on market for inputs in many developing countries (like India, Nepal, Bhutan, Bangladesh, Pakistan etc.) the limitations too are seriously restricting the growth of organic animal husbandry in these countries. Especially the stocking density, feed and fodder scarcity, sanitation, infectious disease prevalence are major challenges for animal husbandry etc. May be the increasing interest in this underdeveloped organic sector by *inter alia* FAO (<http://www.fao.org/docrep/017/aq381e/aq381e.pdf>) and IFOAM would help develop organic animal husbandry in these countries. The recent initiative i.e. International Animal Husbandry Alliance (IAHA) by IFOAM (<http://www.ifoam.org/en/sector-groups/iaha-animal-husbandry-alliance>) may help in this direction.

Suggestions to contribute towards an Action Plan for the development and strengthening of Organic Animal Husbandry

1. The research, academic & development agencies in Asian countries as also international organizations should augment funding for research, academic and development efforts to develop organic animal husbandry sector to improve the availability of high quality, safe, organic animal products for the consumers.
2. The role of organic standards in achieving tangible outcomes for animal health and welfare needs to be further recognized. Thus, the countries in the continent must evaluate and further develop organic standards accommodating the location specific requirements within the preview of Principles of Organic Agriculture to support the progress of this sector.
3. The consumer education and awareness for safe & healthy food products of animal origin is required to promote & develop domestic market of organic livestock products in Asian countries.
4. Strategies need to be worked out for improving livestock husbandry on organic holdings.
5. Practical methods of controlling parasites and diseases need to be documented.
6. The cost-benefit-ratio giving due consideration to environmental quality under organic systems need to be worked out to demonstrate convincingly the value of organic livestock production
7. Socio-economics of organic livestock farming also needs better documentation through empirical studies.
8. The causal agents of diseases, preventive measures, and complementary and alternative medicine for animals need to be further explored.
9. Improving animal welfare in organic livestock holding is an area, which needs attention of scientists & policy making bodies.

Extension & Outreach to promote Organic Animal Husbandry

This is an important area to be paid maximum attention considering the novelty of the organic animal husbandry system and its knowledge and skill intensive nature. The following extension methods could be useful:

- Extension literature-leaflets, folders, manuals, bulletins, newspapers, magazines to spread awareness among producers & consumers.
- Farm Radio programmes, TV, films
- Personal contacts by extension agents
- Farm demonstrations: method & result, Exhibitions, farmers' fair
- Farmers' field schools, Farmer to farmer extension, farmers' visit

- Information and Communication Technologies (ICT) and ICT enabled information kiosks/ knowledge centres
- Motivational success stories

Package of practices for organic farming is being developed by many universities and Research Institutions. On similar pattern, improved set of practices for organic livestock production are needed, covering different livestock species, to promote organic animal husbandry in Asian countries.

The extension & advisory services can help greatly to expand area, production and productivity of organic livestock products in the region. The policy support is needed from the government agencies to take further the cause of organic animal husbandry. Thankfully, many countries are coming forward to promote organic livestock production activities one way or other.

References

Chander Mahesh, Kumar Sanjay, Rathore R S, Mukherjee Reena, Kondaiah N & Pandey H N (2007): Organic-vis-à-vis conventional livestock production potential in India. In Proc. International Conference on organic agriculture and food security, FAO, Rome, Italy, 3-5 May, 48-49.

Chander M, Subrahmanyeswari B, Mukherjee Reena & S Kumar (2011): Organic livestock production: an emerging opportunity with new challenges to producers in tropical countries. Rev.Sci.Tech.Off. Int. Epiz, 30 (3), 969-983.

Chander Mahesh, Ramswarup Singh Rathore, Reena Mukherjee, Shyamal Kumar Mondal and Sanjay Kumar (2012): Road Map for organic animal husbandry development in India. In: Gerold Rahmann & Denise Godinho (Eds), Tackling the future Challenges of Organic animal Husbandry, Proc. 2nd Organic Animal Husbandry Conference, Hamburg, Trenthorst, 12-14 September, pp.59-62.

Nalubwama S M, Mugisha A & Vaarst M (2011): Organic livestock production in Uganda: potentials, challenges and prospects, 3(4):749-57.

Rahmann Gerold & Denise Godinho (Eds)(2012): Tackling the future Challenges of Organic animal Husbandry, Proc. 2nd Organic Animal Husbandry Conference, Hamburg, Trenthorst, 12-14 September, 481p.

Scialabba N.E. & Hattam C. (2002). -Organic Agriculture, Environment and Food Security. FAO, Rome, Italy

Willer Helga, Julia Lernoud and Lukas Kilcher (Eds.). (2013): The World of Organic Agriculture: Statistics and Emerging Trends 2013. FiBL (Switzerland), IFOAM (Germany), 344p.

Organic Animal Husbandry in South America and Caribbean

ANGELA PERNAS ESCOSTEGUY¹

Key words: livestock, veterinary, Brazil, homeopathy, medicinal herbs, public policies

Abstract

In the last decade, organic livestock has undergone major developments, especially in southern Latin America. The control of parasites and pathogenic microorganisms presents good results with actions that include adequate management, rustic breeds and the use of homeopathic and/or herbal products or biological control. Some public policies have given very positive results in marketing production. In spite of these results, several aspects need to be improved.

Introduction

Conventional livestock has seen great developments, especially in southern Latin America, due to its favourable natural conditions: large areas of grassland, favourable climate for grain production and tradition of raising cattle. However, this production model has presented several problems and is being criticized in and pressured to adapt to three aspects: environment, animal welfare and food quality. In addition, organic food is becoming more valued, and the demand is increasing both for internal and external consumption. In this context, the organic livestock production chain is growing, but some aspects should be improved in this new production network.

Overview of organic livestock production

The top organic breeding countries are Argentina, Brazil and Uruguay, mainly with beef cattle and sheep. Organic milk cattle and buffalo, poultry, pigs, bees, llamas, goats and aquaculture, although in less quantity, are also growing in many countries. Although there is a considerable number of animals raised on organic systems and even exportation of food of animal origin (mainly meat), there are few available statistics. Some data are in the following table. Blanks do not mean that there are no herds but that there is no official information.

Table1. Countries with organic livestock (minimum 1.000 animals)

	SHEEP	BEEF CATTLE	Buffalo	POULTRY	BEEES HIVES	LLAMAS
ARGENTINA 2013	1.15 million	67.400			31.000	1.180
BRAZIL 2010		99.000		550.000	96.000	
FALKLANDS 2012	196.000	1.300				
URUGUAY 2003		750.000			11.400	
MEXICO 2007		3.000		4.500	37.000	
COLOMBIA 2011			4.000			
CUBA 2011					24.000	
NICARAGUA 2008					13.500	
CHILE 2012					3.400	
BOLIVIA 2011						2.100

Source: Willer & Lernoud, 2014

¹ Welfare Institute (IBEM), Brazil, www.ibembrasil.org, angela@ibembrasil.org

Table 2. Production of milk and eggs

	MILK CATTLE (litres/year)	EGGS units/year
BRASIL 2010	6.8 million	8,64 million
MEXICO 2007	500.000	
COLOMBIA 2011	180.000	

Discussion

Positive Results

Several countries have made significant advances, mainly in the control of parasites and pathogenic microorganisms and in marketing the products, as we present below:

Concerning production: control of parasites and microorganisms

Successful results have been achieved by understanding the need to establish a preventive system that includes a set of procedures that ensure animal welfare, use rustic breeds and rotate animals to break the cycle of parasites. Under these conditions, soft therapies, such as those listed below, have great results.

- **Homeopathy**
The use of homeopathy in animals is booming in Brazil and is also being applied in other Latin American countries for a number of reasons: good results, the simplicity of its application as medicine aggregated to mineral salt or food or water, no resistance, no waiting period, no residues in food. Currently, Brazil is estimated to have 25 million bovines (milk and beef), organic or not, that receive the benefit of this therapy. A new method called Populational Homeopathy, developed for large herds, seeks not only to treat diseases but, above all, to act in their prevention, restoring the balance of organic animals. (REAL, 2014)
- **Bioactive herbs**
Many countries have a long tradition in the use of medicinal herbs. The development of organic animal production systems combined with the problems of drug resistance, high input costs and concern about toxic residues in foods have driven the use of plants or their extracts for both prevention and maintenance of animal health as well for conservation of stored grains. For the last decade in Brazil, popular knowledge is being scientifically confirmed and thereby gaining space and credibility. Studies have shown that plants or their extracts have an efficient anti-parasitic, antibacterial and insecticide action and may be used in animal therapies, environmental disinfection as well for conservation of stored grains. (ESCOSTEGUY, 2014).
- **Biological control**
In Uruguay, there are very good results for biological control of leaf-cutting ants and ticks with entomopathogenic fungi. (RODRIGUES, 2014) These methodologies are just as successful when implemented separately or in combination. (DIAS, 2014).

Concerning public policies

-Two programs developed by the Brazilian government have generated very positive results for the marketing of organic food: (1) Food Acquisition Program (PAA) and (2) National School Feeding Program. It was made a legal requirement to purchase at least 30 percent of the products for school meals from family farmers, prioritizing organic foods. Organic products receive 30 percent more in price.

This supports small-scale farmers in one of the most difficult aspects of the productive process – gaining market access for their production. The program allows farmers to sell their produce directly to local public institutions such as hospitals, community canteens, food banks, orphanages and charities, without the need for a public bidding process.

Demands and needs

In spite of the satisfactory results, several aspects need to be improved:

1. Technical assistance

There is a lack of technical assistance for organic breeders, which reflects the lack of knowledge in the area and education in veterinary and zoo technical colleges.

The study of the principles and standards of organic livestock and the permitted therapeutics and inputs is not part of most veterinary course curricula. SOTO, 2014, expressed the lack of specialized technical assistance and training of farmers in Mesoamerican countries. A survey conducted in Brazil by MITIDIERO, 2010 proved that 87 percent of the 157 veterinary medicine schools of the country do not address the therapeutics allowed in organic production in their curricula: homeopathy, herbal medicine and acupuncture. It is urgent to include the discipline Organic Livestock and related disciplines in the training of veterinary and zoo technical and agricultural technicians.

2. Feeding

Search for other sources of feeding besides soy and corn mainly for poultry and pork.

Search for natural sources of essential amino acids as methionine.

Control the advance of GMO corn.

3. Allowed inputs

Expand the methodology of use of bioactive herbs and biological control.

4. Animal welfare

Establish indicators of animal welfare in organic breeding systems.

Suggestions

Create ways to encourage and pressure governments to adopt public policies to support the organic animal husbandry sector in research, teaching, extension, consumer education and marketing. Perhaps it is appropriate to create a task force to develop strategies to sensitize governments. Update the training curricula of technicians. The inclusion of this new area of expertise is also fundamental and urgent.

References

- Dias, A.V. Organic milk in Northeastern Brazil. Newsletter IAHA, Nº 2, Edition Latin America, JAN/FEV/MAR, 2014
- Escobar, C.A.F. -Overall context of organic animal production in Latin America and Caribbean. Newsletter IAHA, Nº 2, Edition Latin America, JAN/FEV/MAR, 2014
- Escosteguy, A.P.. – Alimentos orgânicos, um mercado em expansão. A Hora Veterinária – Ano 29, nº 174, março/abril, 2010
- Escosteguy, A.P. Pantanal: breeding and preservation. Newsletter IAHA, Nº 2, Edition Latin America, JAN/FEV/MAR, 2014
- Escosteguy, A.P.. Potential Use of Medicinal Plants in Animal Creations: Results In Brazil. In: Rahmann G and Aksoy U (Eds.): Building Organic Bridges. Proceedings of the 4th ISOFAR Scientific Conference at the OWC 2014. 13-15 October 2014 in Istanbul, Turkey
- Escosteguy, A. P. ; Bossardi, M. Knowledge and interest of the Brazilian veterinary class in organic husbandry: preliminary survey. In: 2nd Organic Animal Husbandry Conference, 2012, Hamburg. Tackling the Future Challenges of organic Animal Husbandry. Westerau: Johann Heinrich von Thünen-Institut, 2012.
- Escosteguy, A. P.; Schultz, G. Public Policies to Promote Organic Agriculture in Brazil. In: The 16th IFOAM Organic World Congress Cultivate de Future Modena, 2008, Modena.
- Report Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE- International Policy Centre for Inclusive Growth (IPC - IG) United Nations Development Programme. Brasília, Brazil ,2013



- Figueiredo, E.A.P.& Guimarães, J.P.- Sistemas orgânicos de produção animal: dimensões técnicas e econômicas, Anais da 49a Reunião Anual da Sociedade Brasileira de Zootecnia A produção animal no mundo em transformação Brasília – DF, 23 – 26 de Julho de 2012
- Mitidiero, A.M. et al. – Terapêuticas permitidas na produção orgânica que são oferecidas nos cursos de Med, Veterinária. 37º Congresso Brasil. de Med. Veterinária, Rio de Janeiro, 2010.
- Moraes, A.S. Carne orgânica: novas estratégias no mercado global após a crise econômica. 2011. Artigo em Hypertexto. http://www.infobibos.com/Artigos/2011_2/CarneOrganica/index.htm. Accessed in May 05th, 2012.
- Perez, D.C.E. – Caracterización de la producción ecológica en Colombia, Instituto Interamericano de Cooperación para la Agricultura-IICA, Bogotá, Mayo 2004
- Real, C.M. E Real, M.H. – Homeopatia populacional. NEWSLETTER IAHA, Nº 2, Edition Latin America, JAN/FEV/MAR, 2014.
- Rodrigues, A.S. Control Biológico de Hormigas Cortadoras (Gêneros Atta y Acromirmex) con hongos entomopatógenos. Segundo Taller de Control Biológico INIA La Estancuela. 2008.
- Soto, G. Et Al - A quick look at livestock production in Mesoamerica. NEWSLETTER IAHA, Nº 2, Edition Latin America, JAN/FEV/MAR, 2014.
- Willer, Helga and Julia Lernoud (2014): The World of Organic Agriculture. Statistics and Emerging Trends 2014 . Research Institute of Organic Agriculture (FiBL) and International Federation of Organic Agriculture Movements (IFOAM), Frick and Bonn

Organic Animal Husbandry in North America

FRANÇOIS LABELLE¹

Key Words: organic livestock, animal welfare, genetic selection, alternative medicine

Abstract

Organic livestock production in North America has developed in a context of its own. The challenges and solutions experienced in these conditions can contribute to the strengthening of organic livestock husbandry in the areas of animal welfare, as well as the use of alternative medicines, genetics and feeding.

Introduction

North America is one of the most important markets in the world for organic products (Hiller, 2014). Market research in Canada and the United States consistently shows that dairy products and organic eggs are among the first organic products to be chosen by consumers, after fresh fruits and vegetables. Organic meat represents a smaller market in comparison to dairy and eggs, but is increasing rapidly (Holmes, 2014).

This article describes organic animal husbandry in North America, primarily in Canada and the United States. By identifying key features, positive developments, issues and challenges in this sector, it offers a means for the development and strengthening of organic farming.

Overview of Organic Livestock in North America

Organic livestock production in North America is found primarily in Canada and the United States. Mexico is a major producer of organic fruits and vegetables, but, there are only a few certified organic livestock farms, with the exception of beekeeping. Table 1 shows the organic livestock production in North America in numbers. Data from the United States are collected by their federal Department of Agriculture. For Canada, data is collected by various provincial agencies using different methods of data collection, such that categories of livestock are not always consistent from one organization to the other. Use these data knowing that they are estimates (Macey, 2014).

Table 1: Organic Livestock Numbers in Canada, United States and Mexico:

Country	Animal type		Heads (2012)	% org./conv.
Canada ¹	Pigs	Sows (Quebec)	270	
		Pigs (Ontario)	14 000	
	Bovine	Dairy Cows	15 500	1.6 ⁴
		Beef Cattle	27 000	
	Poultry	Laying hens	239 000	
		Broilers	1 500 000	
	Sheep		5 000	
	Goats		1 000	
	Animal type		Heads (2011)	% org./conv.
United States of America ²	Pigs	Hogs and pigs	12 373	
	Bovine	Dairy cows	254 771	2.78
		Beef cows	106 181	0.34
	Poultry	Laying hens	6 663 278	1.97
		Broilers	28 644 354	0.33
		Turkeys	504 315	0.2
	Sheep	Sheep and lambs	5 914	
	Animal type		Tons (2010)	% org./conv.
Mexico ³	Bees	Honey	1 150	5

Source: ¹ Canadian Organic Growers, ² USDA Economic Research Services, ³ Garibay et al. 2010, ⁴ Statistics Canada

¹ Valacta, Dairy Production Centre of Expertise Quebec-Atlantic, Canada. www.valacta.com Email : flabelle@valacta.com

Main Characteristics of organic animal husbandry in North America

In North America, organic livestock are found in the northern part of the continent in Canada and the United States. Since the early 2000s, organic livestock production has increased steadily in major animal production sectors of these two countries (Fulwider, 2014; Macey, 2014), which include dairy, beef, poultry and swine. In the United States, milk and egg production represent the largest percentage of organic livestock production compared to conventional production. It should be noted that organic dairy production is the main organic livestock production area in both Canada and the United States. Moreover, the majority of developments in research and knowledge transfer are made in this sector. Three research centers are dedicated to organic milk production in the United States: the University of New Hampshire, the University of California and the University of Minnesota. In Canada, the University of Guelph plays this role. It should be noted that these four institutions all have certified organic dairy herds.

Several organizations are involved in knowledge transfer. In the United States, the universities mentioned above provide this service. Organic milk processors are also actively involved in outreach to their producers. Recently, the Rodale Institute, which has been involved in organic agriculture since the 1940s, has added an extension component in animal production to their program. In Canada, producers of organic milk in Quebec receive advisory services from Valacta, a centre of expertise in dairy production. Dairy farmers of Ontario receive advisory services from their organic milk processors.

In Mexico, the main organic livestock farming is beekeeping. Bee and honey production is increasing rapidly, with nearly 300 producers in transition in 2010 from a total of 448. Twenty cooperatives regroup these small scale producers (Garibay et al., 2010).

Positive developments of organic animal husbandry in North America

Animal welfare

In Canada, the Animal Welfare Task Force has undertaken several actions to improve the level of animal welfare in organic animal husbandry, including: the production of fact sheets, organizing training for inspectors, and providing recommendations of new standards for the revision of the Canadian organic standards. These proposals were made to clarify certain standards by adding more specific terms or mandating certain standards set out in codes of practice of the various livestock sectors in Canada. These proposals have also introduced the use of outcome-based assessments of animals, as established by the conventional industry (Labelle, 2014).

In the United States, the Livestock Committee of the National Organic Standards Board issued recommendations to the NOP in 2009 to strengthen their organic livestock standards regarding animal welfare. These recommendations were improved in 2010 and 2011 to include recommendations on stocking rates and details on the handling and transport of animals for slaughter (National Organic Program, 2014). These recommendations are still under study. However, the NOP has approved the use of synthetic products to relieve pain and suffering. These products are used against inflammation, as systemic or local anesthetics, or as sedatives (Karreman, 2014).

Non-antibiotic treatment of diseases

Standards on the use of antibiotics in organic herds are different whether you are in Canada or the United States. In the US, an animal treated with an antibiotic should be removed permanently from the herd (National Organic Program, 2014). In Canada, it is possible to use antibiotics while respecting a withholding period equivalent to double the label requirement or 14 days, whichever is longer. In the case of dairy cattle, a withholding time of 30 days is required. In all cases, the animal loses its organic status for meat (Canadian Organic Standards, 2011).

However, this situation has led to the development of alternatives to antibiotic treatments. In recent years, several research projects have studied the efficacy of plant based intra-mammary products against mastitis, the main disease in organic dairies. These studies are published in recognized scientific journals. In 2014, two studies are underway to validate alternative medicines. North Carolina State University in the USA will study the pharmacokinetics and withholding times of phyto-therapeutic products in lactating and cull cows. At the University of Montreal in Canada, following an analysis of the

literature, alternative treatments with the greatest therapeutic potential will be tested in a clinical study on cows. (Karreman, 2014).

Feeding ruminants

In Canada and in the United States, some large herds tend to use the techniques of conventional industrial farming systems. During the 2000s, it was documented that some large organic dairy herds located in arid areas of the western United States offered little or no pasture. Such situations were possible since the standards in place at that time used vague terms regarding grazing (Kastel et al, 2006). To avoid such situations, new standards have been applied by the NOP. In both countries, animal feeds have always been 100% certified organic. In Canada, the use of concentrates has always been limited to 40% of the total diet for ruminants. Regarding pastures, the standards have been clarified in recent years in both countries. Now, ruminants must have access to pasture during the normal grazing season of their region, and they must ingest a minimum of 30% of grass (on a dry matter basis) in their daily ration.

Crossbreeding of dairy cows

For several years, research on crossbreeding of dairy cows in the United States provided some means to producers seeking to improve the hardiness and longevity of their animals. In the USA, a little over 8% of dairy cows on milking records are crossbred. In certified organic herds, the proportion is much higher (Heins, 2014).

Issues and challenges of organic animal husbandry in North America

Animal welfare:

Factory farming in organic poultry is a reality in the United States and to a lesser extent in Canada. In the United States, industrial organic egg producers do not provide enough access to outdoor vegetated space. Birds are rather confined in henhouses that can hold up to 85,000 laying hens on a farm that raises 340,000 birds (Vallaey et al., 2010). In Canada, there is a lack of accurate data on organic poultry, although it seems that the problem is less important as the sizes of farms are generally much smaller than those in the United States. The situation is still of concern because, as in the United States, the maximum flock size is not regulated and access to the outdoors is far from being adapted to the needs of the birds. Studies have shown the relationship between the size of flocks and the exit frequency of birds (Kijlstra et al. 2007).

The longevity of organic dairy cows compared to conventional dairy cattle is only a few months higher in Quebec (Valacta, 2014). This issue is not confined to Canada, and seems to be widespread in countries producing organic milk (Rahmann, 2011).

Genetic selection:

The use of breeds of poultry, pigs and dairy cattle selected for intensive production does not well serve organic animal husbandry in Canada and United States. This issue is particularly acute with respect to poultry, which can have severe health and behaviour problems (Rahmann, 2011).

Suggestions to contribute towards an Action Plan for the development and strengthening of Organic Animal Husbandry

Animal welfare:

- Strengthen organic livestock standards in intensive livestock: milk, pigs, poultry
- Implement training programs for inspectors and producers on animal welfare

Alternative and complementary medicine:

- Continue to develop rigorous programs of research on the most promising treatments
- Share and collaborate internationally
- Strengthen standards on the use of antibiotics
- Develop decision trees to guide producers on the use of alternative medicines and antibiotics



Genetic selection:

- Continue research on crossbreeding of dairy cows
- Select farm animals to make them hardier while being efficient

Feeding ruminants:

- Strengthen and clarify standards on pastures
- Strengthen standards on maximum amounts of concentrates for ruminants

References:

Canadian Organic Standards, (2014): www.tpsgc-pwgsc.gc.ca/ongc-cgsb/programme-program/normes-standards/comm/32-20-agriculture-eng.html

Fulwider, (2014): Organic Livestock Numbers in United States. Newsletter No 4, IFOAM Animal Husbandry Alliance, October 2014

Garibay, Salvador; Gänz, Peter and Vandame, Rémy (2010): Organic Beekeeping in Mexico. In: Bogdanov, Stefan (Ed.) Apimondia First World Conference on Organic Beekeeping Program and Abstracts, pp. 12-13.

Heins, (2014): Crossbreeding in dairy cows. Newsletter No 4, IFOAM Animal Husbandry Alliance, October 2014

Holmes, (2014): Foreword. Newsletter No 4, IFOAM Animal Husbandry Alliance, October 2014

Karreman, (2014): No-Antibiotics in Organic Livestock: Good or Bad? Newsletter No 4, IFOAM Animal Husbandry Alliance, October 2014

Kastel et al, (2006): Maintaining the integrity of organic milk, The Cornucopia Institute

Kijlstra, A., Traag, W.A. and Hoogenboom, L.A.P. (2007): Effect of flock size on dioxin levels in eggs from chickens kept outside. Poultry Science, 86, 2042-2048.

Labelle, (2014): Animal Welfare Task Force: Improving Animal Care on Organic Livestock Farms in Canada. Newsletter No 4, IFOAM Animal Husbandry Alliance, October 2014

Macey, (2014): Organic Livestock Numbers in Canada. Newsletter No 4, IFOAM Animal Husbandry Alliance, October 2014

National Organic Program, (2014): www.ams.usda.gov/nop

Rahmann, Gerold (2011): Organic animal husbandry needs scientific support. Ecology & Farming, 4-2011, pp. 38-41

Valacta, (2014): www.valacta.com/FR/Nos-publications/Pages/evolution-de-la-production-laitiere.aspx

Vallaëys et al. (2010): Scrambled Eggs: Separating factory farm egg production from authentic organic agriculture, The Cornucopia Institute

Willer, Helga and Julia Lernoud (2014): The World of Organic Agriculture. Statistics and Emerging Trends 2014. Research Institute of Organic Agriculture (FiBL) and International Federation of Organic Agriculture Movements (IFOAM), Frick and Bonn

Organic Animal husbandry in Europe – current and future challenges

CHRISTOPHER ATKINSON¹

Key words: organic livestock, Europe, system adaptation, animal welfare, breeding, feeding

Abstract

Organic livestock production is relatively well established in Europe; however, it often constrained in the extent to which it can accord with organic principles because it takes place in a context that is heavily influenced by intensive agriculture. In these non-organic systems livestock of all species have been generally selected for production and there is reliance on external inputs of imported feed and veterinary medicine. Organic production is largely based on common rules that seek to fulfil organic principles of land related and site adapted production with animal health based on preventative management, the use complementary therapies and appropriate breeds and strains. However, much organic production still closely resembles non-organic farming and further system adaption and technical innovation is required to better meet organic principles and to deliver the highest levels of animal welfare. Many issues are been addressed through public and private initiatives. Current significant challenges still exist such as securing sufficient quality organic protein feed for pigs and poultry, breeding and managing organic parent flocks for laying hens and table birds, managing mastitis in dairy cows without antibiotics, and ensuring that good welfare outcomes are achieved for all species so that it can be demonstrated that societal expectations that organic animals have a 'good life' are being met.

Introduction

Organic animal husbandry in Europe has a long history. From the outset the importance of livestock in providing diversity and fertility in the classic mixed organic farming systems has been seen by most farmers and consumers as an integral part of an ideal organic farming system. However, in recent years all forms of organic production have seen a rapid and sustained growth throughout the continent and this has given rise to a multiplicity of new challenges. The reasons for this growth and the current and emerging challenges facing this rapidly evolving sector are examined in this paper.

Brief history and some important contextual information for understanding organic livestock production in Europe

The IFOAM organic principles strongly reflect the thoughts of the pioneers of organic food and farming in Europe on the place and role of animals in the farming system. In particular it was understood that animals have critical role in producing healthy ecosystems and that an holistic approach to farming should aim to 'sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible'. In the early days of organic farming this high ambition was generally tested in the context of a relatively small number of mixed farms in the more favourable agricultural areas of the continent and while important advances were made these were only known about and understood by a relatively small circle of pioneers. However, in more recent times organic farming and food have gained a more prominent, and in many countries a main stream, role in food and farming attracting the interest of citizens at all levels of society. Much of this success can be traced back to the late 1980's when the burgeoning organic market came to the notice of policy makers and governments partly on the basis of the need to protect consumers from misleading claims about organic status, but also on the basis of the benefits that organic production could bring to society and the environment through offering an alternative to the seemingly irresistible and relentless industrialisation of agriculture. The long standing private initiatives of the organic movement to codify and harmonise the rules or standards for organic farming were influential in or indeed taken up as part of official national and then more recently a European Union (EU) wide adoption of a baseline organic regulation. The EU legislation initially did not contain standards for livestock production, but these were implemented in 2000 with rules for all major livestock species (cattle including buffalo, horses, pigs, sheep, goats, poultry and bees) with the possibility to apply the basic requirements to all other farmed species.

¹Soil Association, Bristol, BS1 3NX, United Kingdom: <http://www.soilassociation.org/>
email CATkinson@SoilAssociation.org

The member countries of the European Union and the closely aligned European Free-Trade Area and Switzerland now include most of the territories of the European continent. The common (or very closely aligned) regulation of organic farming within Europe has been critical in underpinning the development of organic farming as it has allowed specific support for the sector through the agri-environment and market support mechanisms of the EU's Common Agricultural Policy. This extends to publically funded EU wide research and development, and support to extension and knowledge transfer initiatives which often go beyond the territorial boundaries of the EU. In this way the 'European way' is a powerful influence on all forms of farming and land use throughout all but the eastern most countries and regions of the continent.

Much of the early political support for organic farming in Europe was driven by a series of food scandals which culminated in the outbreak of Bovine Spongiform Encephalopathy (BSE) in non-organic livestock in the late 1990's. This debilitating brain disease resulting from the feeding of cattle meat and bone meal to cattle caused not only a huge public outcry, but also propelled organic farming into the spotlight as organic cattle were not affected – the feeding practice was not allowed in organic production. Support and commitment to organic farming at all levels of society saw rapid and sustained growth in livestock production through the late 1990s and early years of this century and this has been followed in recent years by a more gradual, but never the less sustained growth (IFOAM Animal Husbandry Alliance, 2013) despite the difficult financial situation in most counties which has seen a downturn in spending on non-organic food.

Table 1 shows the organic livestock production in Europe. The most important countries keeping organic bovines are Austria, Germany, Italy and Denmark. The most important sheep producers are Italy, UK, Germany, France and Greece. Most pigs are kept in Germany, Denmark, France and UK, and the most important countries producing organic poultry are France and the UK. Poultry production had the strongest increase between 2007 and 2012: +62 percent. But also the other animal groups grew substantially: Pigs: + 45%; bovine animals: +54%; sheep + 34%.

Table 1: Organic Livestock Numbers in Europe

Animal category	Number of animals (2012)	Increase 2007 - 2012
Bovine animals	3'191'838	54 %
Sheep	4'530'577	34 %
Poultry	32'443'772	62 %
Pigs	920'588	45 %

Source: OrganicDataNetwork survey 2013; FiBL-AMI survey 2014, unpublished

Key Challenges

System adaptation

Europe contains extremely diverse environments for agriculture. Today organic livestock production now takes place in a vast range of climatic and geographical circumstances and on farms that range from hundreds of hectares to fractions of a hectare. However, it is not just climate and geomorphology that dictate farming practice. European agricultural policy, and other societal changes have a profound influence on the where and what type of livestock production takes place. The industrialisation of non-organic livestock production has generally been greatest in the more agriculturally productive areas and this has generally meant specialisation and intensification in all species, with an associated emphasis on production traits in breeding goals, systems based on close confinement (housing) of animals and reliance on prophylactic veterinary medication. In the less productive environments where agricultural is limited by long cold winters or arid summers and in the high mountains, more traditional pastoral systems of ruminant production have persisted, but they are often obliged to become more specialised and often reliant on external inputs – protein feed to fatten animals quickly and veterinary medicines to overcome parasites – due to the need to compete on price with cheap livestock produc-

tion in the more favourable areas. Overall the tendency has been toward animal production being less related to the land on or region in which it takes place. This is of course a fundamental problem in terms of organic production, which aspires to deliver livestock production that is closely related to the land and which ensures that 'animals are provided with the conditions and opportunities of life that accord with their physiology, natural behaviour and well-being'.

These problems of developing systems that are better aligned with organic principles are generally more acute in non-ruminant production as pig and poultry production has seen the greatest intensification with reliance on confinement, imported cereals and soya and synthetic amino acids. Breeding for organic poultry is not yet well developed with significant reliance still on non-organic young animals (pullets and day old chicks) often from breeds and strains that are not well adapted to organic production.

For ruminants the better availability of traditional breeds and strains offers possibilities for organic production, but challenges still exist in defining information (breeding indexes) that organic farmers can use to reliably select animals that will be better suited to organic systems. Cross breeding is employed in organic dairy cattle as a way of increasing robustness and longevity and helping to decrease the incidence of production diseases such as mastitis.

Animal welfare

Meeting the organic principles and societal expectations places a significant emphasis on the need for good animal welfare on organic farms. Ensuring and demonstrating that animals do have a 'good life' is an important challenge (FAWC 2009). Organic standards specify resources (feed, space, access to pasture), but evaluating the effect of these on the condition and well-being of the animal can be problematic. A number of initiatives, both private (e.g. <http://www.assurewel.org/>) and publically funded (e.g. <http://www.animal-welfare-indicators.net/site/>) have recently begun to develop welfare assessment and benchmarking tools for use in organic inspection and by farmers to help to demonstrate and drive improvement in animal welfare outcomes. Better understanding of what animals need to achieve a good life could inform the future development of organic livestock systems.

Suggestions to contribute towards an Action Plan for the development and strengthening of Organic Animal Husbandry

System adaptation

Many of the challenges facing organic production in Europe involve achieving system adaptations to bring organic livestock production into closer alignment with organic principles.

Breeding

For non-ruminants animals must be able to utilise protein crops that can be grown in the region and be capable of exploiting pasture and roughage for nutrition.

Selection tools (breeding index) should be developed for all species that specifically account for the characteristics that organic producers require in their animals.

Feed

Further research is required to identify and research novel feeds and food sources, including better use of pasture and roughage as well as alternative and novel high quality protein sources such as insects.

Welfare outcomes

Reliable welfare outcome assessment tools must be developed to supplement resource based standards.

References

- FAWC (2009). Farm Animal welfare in Great Britain: Past, present and future. Farm Animal Welfare Council, Area 5A, 9 Millbank, c/o Nobel House, 17 Smith Square, London SW1P 3JR <http://www.fawc.org.uk>
- IFOAM (2013) International Animal Husbandry Alliance. IAHA Newsletter No 1 September 2013. Eds Otto Schmid & Angela Escosteguy, <http://www.ifoam.org/en/sector-groups/iaha-animal-husbandry-alliance>



Organic Animal Husbandry in Turkey and Middle East

İBRAHİM AK¹, METİN GULDAS²

Key words: Organic animal husbandry, Organic agriculture, Turkey, Middle East, Rural development

Summary

Turkey has a great potential in terms of available livestock in the region. Agricultural crop and animal production have generally been sustained in the small scale family type farms together. Extensive methods are mostly being used for animal husbandry. The low income level encourages migration to urban from rural areas. Significant social problems have been emerged due to unplanned and excessive growth experienced in urban areas. The share of organic production in the total animal production is very little due to low level of consumer awareness and purchasing power in the domestic market. In addition, there are some problems in the exportation of organic animal products. For this reason, the organic animal production should be supported to increase the consumption.

Introduction

At first Turkey, Iran and Syria as well as some Middle East countries have significant livestock capacity. However, production and consumption of animal products are very low due to the low consumer awareness and purchasing power in the domestic market and exportation problems caused by some animal diseases encountered in these countries. The Middle East region is a complex mix of nations which are demographically and geographically very different. Very few data were found regarding to organic livestock in the Middle East countries. These data was provided by IFOAM/FIBL (2012) and summarized in Table 1.

Table 1. Comparison of total and organic livestock data for Turkey and Middle East Countries (head animal)

Country	Organic ¹				Total ²			
	Bovine	Pig	Poultry	Sheep	Bovine	Pig	Poultry	Sheep
Turkey	56 204 ³	-	281 132 ³	33 985 ³	12 386 337	1 848	270 202 034	25 031 565
Bahrain	-	-	-	-	10 000	-	550 000	41 000
Iran	500 ³	-	13 000 ³	3 000 ³	8 650 000	-	927 000 000-	50 214 617
Iraq	-	-	-	-	2 720 000	-	38 000 000	8 200 000
Israel	-	-	-	-	435 000	224 000	40 179 000	540 000
Jordan	-	-	-	-	68 510	-	27 000 000	2 233 980
Kuwait	-	-	-	-	35 500	-	33 000 000	475 000
Lebanon	20	-	2 250	863	78 000	7 800	65 000 000	450 000
Oman	-	-	-	-	346 000	-	4 600 000	404 000
Palestinian	-	-	-	-	37 000	-	6 212 000	736 000
S. Arabia	190	-	-	2 846	500 000	-	8 600 000	11 000 000
Syrian	-	-	-	-	1 108 473	-	181 500 000	18 062 841
UAE	-	-	-	-	107 000	-	20 000 000	1 400 000
Yemen	-	-	-	-	1 684 000	-	21 500 000	9 419 000

¹Organic live stock data by Willer, H. (FIBL/IFOAM Survey 2012)

²Total livestock data by FAO (faostat3.fao.org/faostat- gateway) were collected

³Ministry of Food, Agriculture and Animal Husbandry (MFAAH), Organic Agriculture Information System, 2014.

⁴Asadollahpour et.al., 2013

The Middle East has various ecological zones from arid to cool rainy climates. The animals are generally grazed in rangelands, for example, for more than 9 months in Iran (Valizadeh, 2011) and about 4-5 months in Lebanon. The plants used for organic animal feeding are mostly vetch, triticale, corn and peas in Lebanon. In Iran organic farming can be found in 11 out of Iran's 31 provinces. More than half of the organic agricultural land is placed in the fertile Northern provinces, but only five percent (144) of the organic farms are located in this area. The average farm size in this part of the country is 30 to 40 hectares.

¹Uludag University, Faculty of Agriculture, Animal Science Department, Bursa-Turkey

²Uludag University, Karacabey Vocational School, Karacabey, Bursa-Turkey

The remaining 95 percent of the organic farms (2 870) are concentrated in the Southern Iran provinces, but with an average farm size of only 1.2 hectares. The organic agricultural land consists of 7 256



hectares of which 1 265 is in conversion (Table1). The wild collection area amounts to 40 700 hectares, and it is located in the three provinces named as Fars, Kerman, and Khorasan. Animal production is mostly concentrated in the province of Khorasan in Northeast Iran with 13 000 chickens, 3 000 sheep, 500 cows, 140 turkeys, and 50 geese (Asadollahpour et.al., 2013).

Problems regarding to organic animal husbandry in Iran and the Middle East countries can be summarized as structural/institutional, financial, cognitive and emotional. Lack of required infrastructure such as facilities for transport and storage was defined as important barriers, but institutional and organizational difficulties were recognized as critical barriers beside the infrastructural barriers. Farmers generally did not receive any loan and subsidy from the governments to sustain organic farming in this region (Sharifi, 2010).

There was a tension between the organic producers and the organic business interests regarding the organic standards. The farmers were more concerned about the land caring while the business interests were more concerned with the growing market. The certification is one of the main challenges for farmers in terms of adopting organic farming. This has also been mentioned as a critical challenge for farmers in many other countries. In Iran for example, there are no national certification bodies that may verify organic products officially and therefore, farmers have to utilize international certification bodies. In Iran 80 % of farmers are smallholders; such a certification system is extremely expensive for them (Asadollahpour et.al., 2013; Soltani et al., 2013).

Organic Animal Husbandry in Turkey

In Turkey, organic farming first started in 1984 with traditional export products and in later years, showed a rapid development and has exceeded 200 different products. In addition, nearly all organic products produced are exported to developed countries. Except bee products, all of the exported products consist of plant products. In recent years, the interest for organic products has increased in the domestic market. Organic agriculture in Turkey showed a strong development based on the exportation. But, the possibility of exportation of organic animal products is very low except bee products. Turkey has a great potential in terms of organic livestock (Ak, 2013). The production in all of the main animal husbandry branches has mostly been continued in extensive conditions, except for one part of the cattle breeding and few intensive poultry farms. Low input usage in many animal husbandry branches causes the low animal yield and income level. Production of animals such as sheep and goat has mostly been sustained as pasture-based. The animal husbandry has generally been done with native breeds which are resistant to diseases and have low yield. Turkey has quite high potential in terms of organic animal husbandry, however, this potential have not been utilized efficiently. The regions polluted due to intensive agriculture and industrial activities, South East Anatolian region at first, are of great potential in terms of organic animal husbandry. But, the problems such as animal diseases encountered in the exportation of animal products, insufficient demand dependent on low consumer awareness and purchasing power in the domestic market affect the development of organic animal husbandry, negatively (Ak, 2013).

The number of farms or plants in which organic animal husbandry has been sustained is very few. However, there is an increase in the number of farms engaged with organic farming and organic livestock in recent years (Table 2). The amounts of organic animal products are given in Table 3. In Turkey, a significant amount of organic honey has been produced and exported, although productions including organic meat, milk and egg are very low.

Table 2. Organic livestock in Turkey between 2005 and 2013

Year	Number of Producers	Large Animal (Head)	Small Animal (Head)	Poultry (Head)
2005	6	1.953	10.066	890
2006	12	2.400	11.002	5.894
2007	27	4.497	16.711	22.247
2008	37	4.578	12.180	22.428
2009	150	7.207	16.374	111.760
2010	174	37.432	21.454	342.329
2011	225	12.162	33.818	431.754
2012	1.587	56.204	33.985	281.132
2013	1.632	47.715	91.053	516.375

Source: MFAAH, Organic Agriculture Information System, 2014.

Table 3. Organic Animal Production in Turkey 2013 (Except the products produced in transition period)

Animal Variety	Number of Producer	Number of Animal (Head)	Milk Production (ton)	Meat Production (ton)	Egg Production (number)	Chicken Meat Production (ton)
Cattle	1.126	47.715	51.003	3.126	-	-
Sheep	371	72.414	1.103	128	-	-
Goat	111	18.639	2.675	98	-	-
Chicken	24	516.375	-	1.618	48.040.778	10.030
Total	1.632	655.143	54.781	4.970	48.040.778	10.030
Beekeeping	279	Number of bee hives			32.342	
		Honey production, ton			335.53	
		Beeswax, ton			2.50	
		Pollen, ton			4.96	
		Propolis, ton			0.67	
		Royal jelly, ton			0.38	
		Total Production, kg			344.04	

Source: MFAAH, Organic Agriculture Information System, 2014

Meadows and pastures in Organic Animal Husbandry and production of feed plants

Organic farming is of great importance in the natural grazing areas. In fact, the largest part of the organic farming areas in the world consists of meadows and pastures. In Turkey, the total area including meadows, pastures and upland is about 15.2 million hectares. This equals to 17% of the total country area. Due to early and heavy grazing of meadows and pastures, the yield is very low. For this reason, the attempts including a new Turkish law regarding the pastures, land management and reclamation were initiated. By means of reclamation and management of pastures, the yield of pasture can be increased 2-3 times more. Sheep production in the pastures located in East, South East and Central Anatolia Regions and cattle production in the other regions including flat and lowland areas have been sustained. Goats can only maintain its presence in the rugged terrain (Akkuş, 2013).

In organic farming, cultivation of organic forage crops for winter feeding is required. There has been a significant increase in the production of forage crops as a result of governmental supports in the recent years; however lack of quality forage is still one of the most important problems of animal husbandry in Turkey. A better utilization of pastures and meadows as well as production of forage crops is of great importance for farms in terms of lowering of production costs in animal production and ensuring feeds from reliable sources. In Turkey, the pastures belong to the government. By new legal regulation, the pastures are allowed using or hiring by private individuals. In addition, organic livestock production should be considered at the basin level and sustained with agro-eco tourism activities as parallel, the products obtained should be consumed locally and the more added value should be created for local development.

Problems of Organic Animal Husbandry in Turkey

The demand for organic animal products is insufficient due to lack of confidence to organic products, low level of purchasing power and consumer awareness and the problems experienced in the export of organic animal products. Production capacity of organic animal products is low but, their prices are high. The low level of production causes an increase in the related costs including product processing, marketing and certification. Due to the large number of middlemen, the producers sell their products cheaper, while the consumers buy the product more expensive. Efforts to establish organizations for the producers such as organic farmers association still have not been realized. Control systems are also inadequate. There are significant problems regarding to input supply such as feed. Researches on organic animal husbandry and the number of experienced/trained technical staff is also insufficient. In the EU countries, the effect of the financial support for producers is of great importance in the faster development of organic farming. The supports given to the producers for organic farming and animal husbandry in Turkey are insufficient (Ak, 2013).

Solutions for problems encountered in Organic Animal Husbandry of Turkey

Due to problems arisen from the export, the target for the dairy husbandry should be the domestic market in short-term. The producers connected with the producer organizations should be supported and the awareness of consumers should be raised to increase production. The diet for 0-6 years old children and social service institutions such as hospitals should be encouraged for using organic

products. Pastures are important sources for organic animal husbandry; therefore the pastures should be protected and improved. Artificial pasture plants should be supported. The issues related to organic farming and husbandry should be handled intensively in education and training (Ak, 2013). Research on organic farming/animal husbandry and use of native breeds in the production should be further supported. The potential for organic animal husbandry is higher in the East Anatolia and Mediterranean regions; therefore, productions of goat and sheep should be supported in these regions. The consumer confidence should be increased for organic products.

Conclusion

The development of organic farming and animal husbandry in Turkey and Middle East countries causes to protection of nature and eco-systems, increase the income level of the small farmers, improvement of agro-tourism and rural development and preventing the migration to urban from rural areas. It helps to healthy nutrition of the public, mainly babes and children. In order to achieve these targets, the consumers should be better informed. The producers should be encouraged to be better organized. The demand should be increased in the domestic market by supporting production and consumption. On the other hand foreign markets, mainly EU, should be better evaluated in terms of organic animal products.

References

- Ak, İ., M. Koyuncu. 2001. Organic Meat and Milk Production Potential From Small Ruminants in Turkey. International Conference on Organic Meat and Milk from Ruminants. Athens, Greece, 4-6 October 2001. p: 42.
- Ak, İ. 2013. Türkiye'de Ekolojik Hayvancılık. Türkiye II. Organik Hayvancılık Kongresi. 24-26 Ekim 2014, Bursa, 24-40 s.
- Asadoolahpour, A., Pirmoradi, A., and Mohammadi, S. S. 2013. Organic Farming: Status, Challenges and Barriers – An Iranian Perspective. Journal of Agri-Food and Applied Sciences, 1 (4): 110-118
- Gökkuş, A. 2013. Ekolojik Hayvancılıkta Çayır ve Meraların Önemi. Türkiye II. Organik Hayvancılık Kongresi. 24-26 Ekim 2014, Bursa, 87-93 s.
- GTHB. 2014. <http://www.tarim.gov.tr/Konular/Bitkisel-Uretim/Organik-Tarim/Istatistikler>.
- IFOAM 2002. IFOAM Basic Standards for Organic Production and Processing. International Federation of Organic Agriculture Movements (IFOAM). Bonn
- Sharifi O. 2010. Barriers to conversion to organic farming: A case study in Babol County in Iran. African Journal of Agricultural Research Vol. 5(16): 2260-2267
- Valizadeh, R. 2011. Traditional Animal Agriculture and Challenges for Development of Organic Livestock Farming in Iran. The 3rd International Conference on Sustainable Animal Agriculture for Developing Countries (SAADC2011) July 26-29, 2011, Nakhon Ratchasima, Thailand.

IAHA Workshop - Main Conference

Towards an Action Plan for the development and strengthening of Organic Animal Husbandry

Date and time: Wednesday, October 15th 2014, 11.30 – 13.00 h

Venue: ICC Istanbul Congress Centre, Workshop A, Hall Maçka

Part I: General actions for the development of Organic Animal Husbandry

(Short input presentations, 30 min, 5-10 minutes each speaker)

- **Welcome and results of the IAHA Pre-Conference: Diagnostic and reflections on an Action Plan**
Otto Schmid, IAHA chair / FiBL (Moderator)
- **Organic Public Policies: Case of success in Brazil**
Angela Escosteguy, Welfare Institute, Brazil
- **Breeding in Organic Animal Husbandry - where to go? Results from IAHA Forum discussion** Anna Wallenbeck, University of Agricultural Sciences, Uppsala, Sweden /ECO-AB

Part II: Ideas and elements of an ACTION PLAN for the development of Organic Animal Husbandry internationally

(Open space/group discussions, 35 min, each group with a moderator)

The goal is to collect the main elements for an action plan outline for the period 2014-2017 through group discussions to be presented in the General Assembly of IFOAM as a recommendation. The group discussions take place in following groups:

- a) Policy support: Special credit and finance incentives, government purchases/public procurement to promote organic animal products (*Angela Escosteguy, Brazil*);
- b) Formal education: e.g. inclusion of the subject of organic animal production in the curricula of veterinary and zoo-technical students/ Technical and extension assistance and transfer of knowledge to farmers (*Prof. Ibrahim Ak, Bursa University, Turkey/ Barbara Frueh, FiBL-Switzerland*)
- c) Research and development of outcome-oriented indicators of animal welfare and health
(*Chris Atkinson, Soil Association, United Kingdom*)

- d) Research and development of suitable concepts on animal breeding (*Anna Wallenbeck, European Consortium for Organic Animal Breeding - ECO-AB, Sweden*);
- e) Research and development of alternative (complimentary) health and medicines (*François Labelle, Canada*)

Part III: Recommendation/ Declaration on Organic Animal Husbandry
(15 min group reports, 10 min general discussion of Declaration)

Moderators: Prof. Geri Rahmann (Thünen-Institute of Organic Farming , Trenthorst, Germany) and Dr. Mahesh Chander (India / IAHA)

Discussion of a recommendation (Istanbul Declaration for Organic Animal Husbandry)

to be presented to the General Assembly of IFOAM

Organic Public Policies: Case of success in Brazil

ANGELA PERNAS ESCOSTEGUY¹

Key words: policies, organic products, family farms, school meals

Abstract

The paper shows the role and the importance of governments to act in the implementation of specific public policies to develop and fortify the organic production network. Two Programs implemented by the Brazilian government have had very good results in the development of the commercialization of organic animal and plant products and deserve special attention: The Food Acquisition Program (PAA) and the National School Feeding Policy (PNAE).

Introduction

Historically, in Brazil as in most countries, organic agriculture has had most of its support from NGOs, usually formed by consumers and producers. However, the current model known as conventional or industrial, implemented by the Green Revolution, has had ample and full support of governments during many years. Unfortunately it did not happen with the organic model although it brings great benefits to society by caring for the environment, capturing carbon, taking care of water resources, preserving biodiversity, treating waste and producing more healthy and nutritious food. The objective of this presentation is to show the role and the importance of governments to act in the implementation of specific public policies to develop and fortify the organic production network. We will comment two Programs that have been successful in Brazil and have been copied by other countries in Africa and Latin America.

Actions and Discussions

In the last decade, the Brazilian government has undertaken very good initiatives not only in fighting hunger and extreme poverty but also promoting agro ecology and organic production. "One aspect of the success can be attributed to linking the supply by smallholder farmers to the demand of institutional food-net programs. This has been coined by the Bill and Melinda Gates Foundation as 'Structured Demand'. The theory of change is that structured demand connects large, predictable sources of demand for agricultural products to small farmers, which reduces risk and encourages improved quality, leading to improved systems, increased income and reduced poverty" (Brazil, 2013).

Two Programs implemented by the Brazilian government have had very good results in the development of the commercialization of organic food of vegetable origin (fresh vegetables, grains, fruits and juices) and also animal origin (milk and dairy, eggs, fish, meat and honey) and deserve special attention: The Food Acquisition Program (PAA) and the National School Feeding Policy (PNAE).

The PAA was implemented in 2003 to support sustainable development, directing government purchases of food to locally produced food, mainly from small farms, called Family Agriculture. It supports smallholder farmers in one of the most difficult aspects of the productive process: gaining market access for their products. The program allows farmers to sell their produce to local public institutions such as hospitals, community canteens, food banks, orphanages and charities, without the need for a public bidding process. PAA demonstrates the opportunity and feasibility of linking family farm production to local demand. This Program has several goals:

- To supply food in quantity, quality and regularity to the population in a situation of food and nutritional insecurity,
- To promote social inclusion in the country by strengthening Family Agriculture,
- To support sustainable development, through the acquisition of diverse and locally produced food, from Family Agriculture.

¹Welfare Institute (IBEM) , Brazil, www.ibembrasil.org, angela@ibembrasil.org

The other Program, called National School Feeding Policy (PNAE) was implemented in 2009 and created a legal requirement to purchase at least 30 percent of the products for school meals from family farmers, prioritizing organic foods and paying 30 percent more for the organics. The Program feeds around 47 million students each day in Brazilian public schools (Melão, 2012).

In 10 years, more than three million tons of food from over 200.000 family farmers have been purchased. Its initial budget in 2003 has grown over 600 per cent in 10 years. The annual budget in 2013 was US\$ 1.75 billion (Brazil, 2013). Considering that 30 percent of these resources must be used to purchase food from family farmers, the Program significantly has increased family farm incomes and expanded market opportunities. Of course, its implementation is not simple and occurs gradually as the producers organize themselves and the necessary logistical structures are established.

The PNAE creates a steady demand for produce during the whole year and at the same time assures nutritional security for school children. It is a program that perfectly combines social and economic impacts and benefits one of the most vulnerable populations: children. On the other hand, it considerably supports small producers who often face serious difficulties, mainly in marketing their products.

Results

Studies conducted after several years of the implementation of the Programs in small communities in the countryside (Formiga, 2011, Santos, 2011,) showed that the introduction of food from family agriculture in school lunches had several benefits to the community:

- a) increased profit for producers,
- b) encouraged farmers to produce organic foods,
- c) favored the cooperatives and associations,
- d) fortified local and regional circles and marketing networks ,
- e) valued the organic food production,
- f) promoted healthy eating habits ,
- g) improved the quality of life of its inhabitants,
- h) provided local economic development ,
- i) introduced the theme of sustainability in schools and in the community.

Another study (Santos, 2013) questioned municipal managers about the difficulty of insertion of organic food in school meals, and they highlighted the following causes: insufficient local production (59.01%); lack of certification (31.14%); high cost (4.9%); disorganization of the involved organs (3.27%); conventional agriculture in transition to organic (1.6%). This shows a panorama of the current limitations of the organic sector which can serve to guide future actions to minimize these difficulties.

The Brazilian experience of the Food Acquisition Program has been adapted in other countries. In Africa, the PAA is already in Ethiopia, Niger, Mozambique, Malawi and Senegal. In Latin America and the Caribbean, the programs are being adapted in 10 countries: Bolivia, Colombia, Ecuador, El Salvador, Guatemala, Honduras, Nicaragua, Paraguay and Peru, Antigua and Barbuda.

Another important point is that these actions also provide universal access to organic food usually only affordable for an elite population.

Conclusion

In short, these are examples of action that governments may take on in a more advanced attitude, which is not only limited to establishing laws and supervision, but also to collaborating actively for the development of the sector. Surely, there is a set of actions that governments can and should take to develop and strengthen the network of organic production.

References

Brazil, 2013 - * Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE International Policy Centre for Inclusive Growth, United Nations Development Programme, October 2013



Escosteguy, A. P.; Schultz, G. Public Policies to Promote Organic Agriculture in Brazil. In: The 16th IFOAM Organic World Congress Cultivate de Future Modena, 2008, Modena. Report Structured Demand and Smallholder Farmers in Brazil: the Case of PAA and PNAE- International Policy Centre for Inclusive Growth (IPC - IG) United Nations Development Programme. Brasilia, Brazil ,2013

Escosteguy, A. Brazil Agro-ecological- National Plan for Agroecology and Organic Production. NEWSLETTER IAHA, Nº 2, Edition Latin America, JAN/FEV/MAR, 2014.

Formiga, W.A.M. et al. Análise da implementação da agricultura familiar na merenda escolar de São Bentinho-PB, Trabalho de conclusão de curso Gestão Pública Municipal, Universidade Federal da Paraíba, 2011.

Melão, I.B. Produtos sustentáveis na alimentação escolar: o PNAE no Paraná. Cad. IPARDES. Curitiba, PR, e ISSN 2236-8248, v.2, n.2, p. 87-105, jul./dez. 2012

Silva, K.R.D Análise da comercialização e do impacto do PAA e PNAE n condição de vida das famílias agricultoras de bananeiras, na Paraíba. Curso De Especialização em Gestão Pública Municipal Universidade Federal da Paraíba, 2011.

Santos, F. Evaluation of the inclusion of organic food from family-based agriculture in school food in municipalities of rural territories of the state of Rio Grande do Sul, Brazil. Ciência & Saúde Coletiva, 19(5):1429-1436, 201, 2013.

Breeding in Organic Animal Husbandry - where to go?

ANNA WALLENBECK¹, LOTTA RYDHMER¹, OTTO SCHMID²

Key words: organic, animal breeding, genetics, livestock

Abstract

Questions and thoughts from a web-based discussion about breeding for organic animal husbandry are summarised. The result of organic production is highly influenced by the genotype of the animals used. Breeds should be chosen and breeding animals should be selected that the animals are well adapted to the production system. The development of tools facilitating such choices should be encouraged.

Introduction

The European Consortium for Organic Animal Breeding (Eco-AB) is a network for researchers studying breeding for organic production (www.eco-ab.org). This paper summarises a discussion on animal breeding for organic farming initiated by Eco-AB and IAHA (IFOAM Animal Husbandry Alliance). The discussion forum was a web page open from June to September 2014. The goal of the discussion was to give input on animal breeding at the IAHA Workshop "Towards an Action Plan for the development and strengthening of Organic Animal husbandry" in Istanbul October 2014.

Results of the forum discussion on breeding

The starting point of the discussion was a previous documentation on organic animal breeding, especially a position paper from Eco-AB (Nauta et al., 2012) and a documentation from an animal breeding discussion at the IFOAM Animal Husbandry Conference in Hamburg 2012 (Rydhmer and Spengler Neff, 2012). For some species, and some organic livestock systems, the use of animals bred for conventional systems based on a high input of resources is inappropriate. However, in other situations there are relatively small differences between organic and conventional systems and the use of livestock bred for conventional production systems may be appropriate (Nauta et al., 2012). The discussion on future organic breeding at the IFOAM Animal Husbandry Conference in Hamburg in 2012 concluded that the following steps are needed for the development of organic animal breeding: In the first step there is a need for evaluation of current animal material (in most cases these are modern breeds) in organic production systems. If the environment and management cannot be adjusted towards the animals' needs there is a need for change of genotype in the second step, either by using the best animals (e.g. sires) of the animal material available (within the breed currently used) or changing to a breed better adapted to the environment in the specific organic production system (if there is such a breed). In cases with large differences between the environments in the organic production system and the system where the breeding animals are tested and selected (and when the organic production is performed in a large scale), it could be relevant and realistic to develop special organic breeding programs (Rydhmer and Spengler Neff 2012). In general, traits related to health (e.g. resistance to parasites), robustness and reproduction are supposed to be of extra importance for organic production. Roughage consumption and the ability thrive on local feed is also important.

The discussion was centred on the following seven statements:

- For animal welfare reasons organic farming needs a breeding system within the organic production chain, based on organic principles.
- Organic breeding including selection of animals under organic circumstances is a must in order to minimize effects of GxE genotype by environment interaction).
- The use of native breeds should be stimulated since such animals fit the local environments.

¹ Department of Animal Breeding and Genetics, Swedish University of Agricultural Sciences, Lotta.Rydhmer@slu.se, Anna.Wallenbeck@slu.se. Members of Eco-AB

² Department of Socio-Economic Sciences, FiBL, otto.schmid@fibl.org, IFOAM Animal Husbandry Alliance (IAHA)



- Artificial reproduction increases the possibility to genetically improve traits especially important for organic production, e.g. health traits
- The use of breeding animals resulting from Embryo Transfer (ET) should be forbidden since these techniques are forbidden at organic farms.
- Organic breeding standards must be introduced in the legislation stepwise.
- The techniques used to produce breeding animals are of less importance, what matters is the animals breeding values for organic production.

There is a need for a clearer position and recommendations on animal breeding for organic production, but the opinion on what parts of the breeding system that should be included in such recommendations varied. Recommendations on what should be included in breeding goals for the animal material used in organic production systems was one suggestion while some focused more on which breeding and selection techniques that could be allowed. Animal welfare was not highlighted as a motive for 'organic breeding'.

It was argued that the general magnitude of GxE in organic and conventional production systems is too small to affect the ranking of breeds. Even though specific organic breeding programs could be a good idea for other reasons, GxE should not be a reason for such requirements. Native breeds are important gene pools for biodiversity that should be preserved, but how that should be related to, and used, in organic production is not clear. It was argued that improved biodiversity can be achieved also by using the variation within conventional breeds and lines that are more genetically progressed. Such breeds can be well adapted to local conditions, often even better than local breeds.

Concerning artificial reproduction, the responses reflect two lines: 1) Artificial reproduction is a good tool to gain genetic progress in breeding traits important in organic production (e.g. health and fertility traits) and 2) There are enough possibilities for genetic gain in breeding without using artificial reproduction. An interesting reflection was presented regarding the term "natural"; is it less natural to use artificial reproduction than to feed grain to ruminants and omnivores? It was also stated that exclusion of ET would exclude all modern breeds of all mammal species in organic livestock production.

The need of legislation/regulations regarding organic breeding was questioned. The best possible methods should be used to arrive at the kind of animal that is best suited for organic production systems.

Discussion

The discussion reflects the variety of views on breeding for organic production; from a rather pragmatic perspective (simply do what gives the largest genetic progress) to a perspective that seems literally based on IFOAM's basic principles. This range shows the need for an on-going discussion.

Suggestions to contribute towards an Action Plan for the development and strengthening of Organic Animal Husbandry

The result of organic production is highly influenced by the genotype of the animals used. Breeds should be chosen and breeding animals should be selected with great care, so that the animals are well adapted to the production system. The development of tools facilitating such choices should be encouraged.

References

- Nauta, W., Spengler Neff, A., Conington, J., Ahlman, T., Lövendahl, P., Rydhmer, L. 2012. Organic animal breeding 2012 – a position paper from the European consortium for organic animal breeding, Eco AB. Proc. 2nd Organic animal husbandry conference, 12-14 Sept. 2012, Hamburg, Germany. p 309-320.
- Rydhmer, L. and Spengler Neff, A 2012 Summary of the Workshop „Future Organic Breeding“ at the 2nd IFOAM-Animal Husbandry Conference, Hamburg, 12-14 September 2012